

Notice of Allowability

Application No.

10/791,021

Examiner

Michael La Villa

Applicant(s)

CHANG ET AL.

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 26 November 2004.
2. ☒ The allowed claim(s) is/are 1-3, 6, 8, 10-13 and 15-17.
3. ☒ The drawings filed on 02 March 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 20041216.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

La Villa 12/16/04

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
2. Authorization for this examiner's amendment was given in a telephone interview with Mr. Ackerman on 16 December 2004.
3. The application has been amended as follows:
4. Please replace the Abstract with the following text:

--Disclosed is a method of making a SVGMR sensor element. In the first embodiment a buffer layer is formed between a seed layer and a ferromagnetic (FM) free layer, the buffer layer being composed of $\alpha\text{-Fe}_2\text{O}_3$ having a crystal lattice constant that is close to the FM free layer's crystal constant and has the same crystal structure. The metal oxide buffer layer enhances the specular scattering. In the second embodiment, a high conductivity layer (HCL) is formed over the buffer layer to create a spin filter-SVGMR. The HCL layer enhances the GMR ratio of the spin filter SVGMR. The third embodiment includes a pinned FM layer comprising a three layer structure of a lower AP layer, a spacer layer (e.g., Ru) and an upper AP layer.--

REASONS FOR ALLOWANCE

5. The following is an examiner's statement of reasons for allowance:

6. In view of applicant's amendments and arguments, applicant has traversed the rejections of the Office Action mailed on 23 August 2004. Rejections are withdrawn. Claims 1-3, 6, 8, 10-13, and 15-17 are allowed.
7. Rejection over Kamiguchi is withdrawn since Kamiguchi does not teach using alpha-Fe₂O₃ layer over the claimed nickel-chromium alloy seed layer materials to form the claimed SVGMR sensor elements.
8. Neither the reviewed prior art nor the prior art of record teaches or suggests the claimed subject matter of Claims 1-3, 6, 8, 10-13, and 15-17. Particularly, the claimed metal oxide alpha Fe₂O₃ layer structure over the claimed seed layer materials is not taught or suggested. Hence, the claims are allowed.
9. Applicant has submitted a revised Abstract that is less than 150 words and is directed to the subject matter of the allowed claims.
10. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

CONCLUSION

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael La Villa whose telephone number is (571) 272-1539. The examiner can normally be reached on Tuesday, Thursday, and alternating Fridays.

Art Unit: 1775

12. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael La Villa
16 December 2004

